

WEST Search History

DATE: Wednesday, September 15, 2004

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DB=USPT,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR

<input type="checkbox"/>	L2	L1 and (freeze\$ or lyophili\$)	9
<input type="checkbox"/>	L1	liposome same (hematoporphyrin or protoporphyrin)	21

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Search Results - Record(s) 1 through 21 of 21 returned.

1. Document ID: US 6620805 B1

Using default format because multiple data bases are involved.

L1: Entry 1 of 21

File: USPT

Sep 16, 2003

US-PAT-NO: 6620805

DOCUMENT-IDENTIFIER: US 6620805 B1

TITLE: Delivery of nucleic acids by porphyrins

DATE-ISSUED: September 16, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Takle; Garry B.	New York	NY		
George; Shaji T.	New York	NY		

US-CL-CURRENT: 514/185; 514/410, 514/44, 536/23.72

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KOMC	Drawn D
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2. Document ID: US 6540981 B2

L1: Entry 2 of 21

File: USPT

Apr 1, 2003

US-PAT-NO: 6540981

DOCUMENT-IDENTIFIER: US 6540981 B2

TITLE: Light imaging contrast agents

DATE-ISSUED: April 1, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Klaveness; Jo	Nycoveien			NO
Fuglass; Bjorn	Nycoveien			NO
Rongved; P.ang.1	Nycoveien			NO
Johannesen; Edvin	Nycoveien			NO
Hendrichs; Paul Mark	Wayne	PA		
Gunther; Wolfgang Hans Heinrich	Wayne	PA		
Bacon; Edward Richard	Wayne	PA		

Toner; John Luke	Wayne	PA
McIntire; Gregory Lynn	Wayne	PA
Desai; Vinay C.	Phoenixville	PA

US-CL-CURRENT: 424/9.6; 424/9.1

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequence](#) | [Attachments](#) | [Claims](#) | [KMC](#) | [Drawn De](#)

3. Document ID: US 6375930 B2

L1: Entry 3 of 21

File: USPT

Apr 23, 2002

US-PAT-NO: 6375930

DOCUMENT-IDENTIFIER: US 6375930 B2

TITLE: Membrane incorporation of texaphyrins

DATE-ISSUED: April 23, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Young; Stuart W.	Portola	CA		
Wright; Meredith	San Jose	CA		
Sessler; Jonathan L.	Austin	TX		
Mody; Tarak D.	Sunnyvale	CA		
Magda; Darren	Cupertino	CA		

US-CL-CURRENT: 424/9.362; 424/1.11, 424/1.65, 424/450, 424/9.1, 424/9.3, 540/1,
540/145, 544/1, 546/11

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequence](#) | [Attachments](#) | [Claims](#) | [KMC](#) | [Drawn De](#)

4. Document ID: US 6270749 B1

L1: Entry 4 of 21

File: USPT

Aug 7, 2001

US-PAT-NO: 6270749

DOCUMENT-IDENTIFIER: US 6270749 B1

TITLE: Use of Texaphyrin in ocular diagnosis and therapy

DATE-ISSUED: August 7, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Blumenkranz; Mark S.	Portola Valley	CA		
Woodburn; Kathryn W.	Sunnyvale	CA		
Miller; Richard A.	Portola Valley	CA		
Young; Stuart W.	Portola Valley	CA		

US-CL-CURRENT: 424/9.61; 424/9.6, 514/185, 514/912

Full	Title	Citation	Front	Review	Classification	Date	Reference				KMPC	Drawn De
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5. Document ID: US 6269818 B1

L1: Entry 5 of 21

File: USPT

Aug 7, 2001

US-PAT-NO: 6269818

DOCUMENT-IDENTIFIER: US 6269818 B1

TITLE: Photoactivation of endogenous porphyrins for treatment of psoriasis

DATE-ISSUED: August 7, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Lui; Harvey	Vancouver			CA
Macaulay; Calum	Vancouver			CA
Zeng; Haishan	Delta			CA
McLean; David I.	Vancouver			CA
Bissonnette; Robert	Vancouver			CA

US-CL-CURRENT: 128/898; 606/1, 607/88

Full	Title	Citation	Front	Review	Classification	Date	Reference				KMPC	Drawn De
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6. Document ID: US 6159445 A

L1: Entry 6 of 21

File: USPT

Dec 12, 2000

US-PAT-NO: 6159445

DOCUMENT-IDENTIFIER: US 6159445 A

TITLE: Light imaging contrast agents

DATE-ISSUED: December 12, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Klaveness; Jo	Oslo			NO
Fuglass; Bjorn	Oslo			NO
Rongved; P.ang.al	Oslo			NO
Johannesen; Edvin	Oslo			NO
Henrichs; Paul Mark	Wayne	PA		
Heinrich; Wolfgang Hans	Wayne	PA		
Bacon; Edward Richard	Wayne	PA		
Toner; John Luke	Wayne	PA		
McIntire; Gregory Lynn	Wayne	PA		

Desai; Vinay C.

Pheonixville PA

US-CL-CURRENT: 424/9.6; 424/9.1, 600/314, 600/317, 600/473, 600/476[Full](#) [Title](#) [Citation](#) [Front](#) [Review](#) [Classification](#) [Date](#) [Reference](#) [Sequenzer](#) [Attachments](#) [Claims](#) [KMC](#) [Drawn D](#) 7. Document ID: US 6100290 A

L1: Entry 7 of 21

File: USPT

Aug 8, 2000

US-PAT-NO: 6100290

DOCUMENT-IDENTIFIER: US 6100290 A

TITLE: Photodynamic therapy in selective cell inactivation in blood and treating immune dysfunction diseases

DATE-ISSUED: August 8, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Levy; Julia G.	Vancouver			CA
North; Janice	Vancouver			CA

US-CL-CURRENT: 514/410; 514/885, 514/908, 604/4.01[Full](#) [Title](#) [Citation](#) [Front](#) [Review](#) [Classification](#) [Date](#) [Reference](#) [Sequenzer](#) [Attachments](#) [Claims](#) [KMC](#) [Drawn D](#) 8. Document ID: US 6074666 A

L1: Entry 8 of 21

File: USPT

Jun 13, 2000

US-PAT-NO: 6074666

DOCUMENT-IDENTIFIER: US 6074666 A

** See image for Certificate of Correction **

TITLE: Liposome compositions of porphyrin photosensitizers

DATE-ISSUED: June 13, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Desai; Narendra Raghunathji	Danbury	CT		
Agha; Bushra J.	Durham	NC		
Kale; Kalidas Madhavrao	Harriman	NY		

US-CL-CURRENT: 424/450[Full](#) [Title](#) [Citation](#) [Front](#) [Review](#) [Classification](#) [Date](#) [Reference](#) [Sequenzer](#) [Attachments](#) [Claims](#) [KMC](#) [Drawn D](#)

9. Document ID: US 5807881 A

L1: Entry 9 of 21

File: USPT

Sep 15, 1998

US-PAT-NO: 5807881

DOCUMENT-IDENTIFIER: US 5807881 A

** See image for Certificate of Correction **

TITLE: Method for selectively reducing activated leukocyte cell population

DATE-ISSUED: September 15, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Leong; Simon	Vancouver			CA
Chan; Agnes How-Ching	Port Moody			CA
Hunt; David William Carey	White Rock			CA
Levy; Julia	Vancouver			CA
Renke; Martin	Burnaby			CA

US-CL-CURRENT: 514/410; 514/885, 514/908, 604/6.08[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequenzer](#) | [Attachments](#) | [Claims](#) | [KMC](#) | [Draw. De](#) 10. Document ID: US 5707608 A

L1: Entry 10 of 21

File: USPT

Jan 13, 1998

US-PAT-NO: 5707608

DOCUMENT-IDENTIFIER: US 5707608 A

TITLE: Methods of making liposomes containing hydro-monobenzoporphyrin photosensitizer

DATE-ISSUED: January 13, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Liu; Ron	North Chicago	IL		

US-CL-CURRENT: 424/9.61; 424/9.1, 424/9.6[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequenzer](#) | [Attachments](#) | [Claims](#) | [KMC](#) | [Draw. De](#) 11. Document ID: US 5599831 A

L1: Entry 11 of 21

File: USPT

Feb 4, 1997

US-PAT-NO: 5599831

DOCUMENT-IDENTIFIER: US 5599831 A

** See image for Certificate of Correction **

TITLE: Method of preparation of pharmaceutical compositions

DATE-ISSUED: February 4, 1997

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Poretz; Ronald D.	Marlboro	NJ	07746	
Chernomorsky; Simon A.	Morris Plains	NJ	07950	

US-CL-CURRENT: 514/410; 424/450, 514/185, 530/359, 540/145

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Section 1115](#) | [Attachments](#) | [Claims](#) | [KWMC](#) | [Drawn D](#)

12. Document ID: US 5458595 A

L1: Entry 12 of 21

File: USPT

Oct 17, 1995

US-PAT-NO: 5458595

DOCUMENT-IDENTIFIER: US 5458595 A

TITLE: Vaginal speculum for photodynamic therapy and method of using the same

DATE-ISSUED: October 17, 1995

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Tadir; Yona	Irvine	CA		
Berns; Michael W.	Trabuco Canyon	CA		
Monk; Brad J.	Long Beach	CA		
Profeta; Glen	Rancho Santa Margarita	CA		
Tromberg; Bruce J.	Irvine	CA		

US-CL-CURRENT: 606/15; 600/220, 606/14

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Section 1115](#) | [Attachments](#) | [Claims](#) | [KWMC](#) | [Drawn D](#)

13. Document ID: US 5389378 A

L1: Entry 13 of 21

File: USPT

Feb 14, 1995

US-PAT-NO: 5389378

DOCUMENT-IDENTIFIER: US 5389378 A

TITLE: Benzoporphyrin vesicles and their use in photodynamic therapy

DATE-ISSUED: February 14, 1995

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Madden; Thomas D.	Vancouver			CA

US-CL-CURRENT: 424/450; 428/402.2

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequence | Attachments | Claims | KVNC | Drauv De

14. Document ID: US 5238940 A

L1: Entry 14 of 21

File: USPT

Aug 24, 1993

US-PAT-NO: 5238940

DOCUMENT-IDENTIFIER: US 5238940 A

TITLE: Compositions for photodynamic therapy

DATE-ISSUED: August 24, 1993

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Liu; Daniel	Vancouver			CA
Jiang; Frank	Vancouver			CA
Hobbs; John	Vancouver			CA

US-CL-CURRENT: 514/410; 514/2, 514/43, 540/145

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequence | Attachments | Claims | KVNC | Drauv De

15. Document ID: US 5169944 A

L1: Entry 15 of 21

File: USPT

Dec 8, 1992

US-PAT-NO: 5169944

DOCUMENT-IDENTIFIER: US 5169944 A

** See image for Certificate of Correction **

TITLE: Methods and compositions for the enteral administration of hepatobiliary MRI contrast agents

DATE-ISSUED: December 8, 1992

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Nelson; James A.	Seattle	WA		
Schmiedl; Udo P.	Kirkland	WA		
Teng; Linnar L.	Bothell	WA		
Bommer; Jerry C.	Wellsville	UT		

US-CL-CURRENT: 424/9.362; 424/9.36, 436/173, 540/145

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequence | Attachments | Claims | KVNC | Drauv De

16. Document ID: US 5053423 A

L1: Entry 16 of 21

File: USPT

Oct 1, 1991

US-PAT-NO: 5053423

DOCUMENT-IDENTIFIER: US 5053423 A

TITLE: Compositions for photodynamic therapy

DATE-ISSUED: October 1, 1991

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Liu; Daniel	Vancouver			CA

US-CL-CURRENT: 514/410; 514/2; 540/145

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Drawn D
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 17. Document ID: US 5041078 A

L1: Entry 17 of 21

File: USPT

Aug 20, 1991

US-PAT-NO: 5041078

DOCUMENT-IDENTIFIER: US 5041078 A

** See image for Certificate of Correction **

TITLE: Photodynamic viral deactivation with sapphyrins

DATE-ISSUED: August 20, 1991

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Matthews; J. Lester	Dallas	TX		
Judy; Millard M.	Dallas	TX		
Newman; Joseph T.	Dallas	TX		
Sogandares-Bernal; Frank	Dallas	TX		
Sessler; Jonathan L.	Austin	TX		
Harriman; Anthony	Austin	TX		
Maiya; Bhaskar G.	Hyderabad			IN

US-CL-CURRENT: 604/6.08; 540/145

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Drawn D
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 18. Document ID: US 5010073 A

L1: Entry 18 of 21

File: USPT

Apr 23, 1991

US-PAT-NO: 5010073

DOCUMENT-IDENTIFIER: US 5010073 A

TITLE: Use of liposomes as carriers for metalloporphyrins

DATE-ISSUED: April 23, 1991

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kappas; Attallah	New York	NY		
Drummond; George S.	New York	NY		

US-CL-CURRENT: 514/185; 424/450, 514/410, 514/493, 514/505

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Derwent](#) | [Attachments](#) | [Claims](#) | [KMC](#) | [Drawn](#)

19. Document ID: JP 60188329 A

L1: Entry 19 of 21

File: JPAB

Sep 25, 1985

PUB-NO: JP360188329A

DOCUMENT-IDENTIFIER: JP 60188329 A

TITLE: TRANSFER ACCELERATOR FOR LIPOSOME INCLUSION SUBSTANCE

PUBN-DATE: September 25, 1985

INVENTOR-INFORMATION:

NAME	COUNTRY
IKEGAMI, SUSUMU	

US-CL-CURRENT: 424/450; 540/145

INT-CL (IPC): A61K 47/00; A61K 9/00

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Derwent](#) | [Attachments](#) | [Claims](#) | [KMC](#) | [Drawn](#)

20. Document ID: JP 60188329 A

L1: Entry 20 of 21

File: DWPI

Sep 25, 1985

DERWENT-ACC-NO: 1985-279208

DERWENT-WEEK: 198545

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TITLE: Agent for accelerating transfer of substance enclosed in liposome - contains haemato-porphyrin deriv. as active component

PRIORITY-DATA: 1984JP-0043488 (March 7, 1984)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
<u>JP 60188329 A</u>	September 25, 1985		003	

INT-CL (IPC): A61K 9/00; A61K 47/00

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWMC | Drawn D

21. Document ID: GB 2146525 A, GB 2146525 B, IL 69720 A

L1: Entry 21 of 21

File: DWPI

Apr 24, 1985

DERWENT-ACC-NO: 1985-101103

DERWENT-WEEK: 198517

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TITLE: Drug delivery system - comprises liposome(s) encapsulating anticancer agent with porphyrin on surface

INVENTOR: MARGALIT, R

PRIORITY-DATA: 1983IL-0069720 (September 14, 1983)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
<u>GB 2146525 A</u>	April 24, 1985		011	
<u>GB 2146525 B</u>	January 14, 1987		000	
<u>IL 69720 A</u>	August 31, 1987		000	

INT-CL (IPC): A61K 9/50; A61K 31/40; A61K 47/00; B01J 13/00

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWMC | Drawn D

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liposome same (hematoporphyrin or protoporphyrin)					21

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L2: Entry 3 of 9

File: USPT

Jun 13, 2000

DOCUMENT-IDENTIFIER: US 6074666 A

** See image for Certificate of Correction **

TITLE: Liposome compositions of porphyrin photosensitizers

Brief Summary Text (2):

The invention relates to improved pharmaceutical formulations comprising liposomes incorporating porphyrin photosensitizers. Specifically, the invention is directed to a freeze-dried pharmaceutical formulation comprised of a porphyrin photosensitizer, a disaccharide or polysaccharide and one or more phospholipids which, upon reconstitution with a suitable aqueous vehicle, forms liposomes containing the porphyrin photosensitizer. Particular porphyrin photosensitizers which are advantageously employed in the practice of this invention include the hydro-monobenzoporphyrins having a light absorption maxima in the range of 670-780 nanometers. The photosensitizing formulations are useful to mediate the destruction of unwanted cells or tissues or other undesirable materials by irradiation or to detect their presence through florescence.

Brief Summary Text (12):

Accordingly, hematoporphyrin and hematoporphyrin dimethylester have been formulated in unilamellar vesicles of dipalmitoyl-phosphatidyl choline (DPPC) and liposomes of dimyristoyl (DMPC) and distearoyl-phosphatidyl choline (DSPC). Zhou et al., *supra*; Ricchelli, F., *New Directions in Photodynamic Therapy*, (1987) 847: 101-106; Milanesi, C., *Int. J. Radiat. Biol.*, (1989) 55: 59-69. Similarly, HP, Photofrin.RTM. porfimer sodium, and tetrabenzo-porphyrins have been formulated in liposomes composed of egg phosphatidyl choline (EPC). Johnson, F. M. et., *Proc. Photodynamic Therapy: Mechanisms II*, (1990), *Proc. SPIE-Int. Soc. Opt. Eng.*, 1203: 266-80.

Brief Summary Text (15):

The present invention involves a freeze dried pharmaceutical formulation comprising a porphyrin photosensitizer, a disaccharide or polysaccharide, and one or more phospholipids, which freeze-dried formulation forms liposomes containing a therapeutically effective amount of the porphyrin photosensitizer upon reconstitution with a suitable aqueous vehicle. The invention also relates to the liposome composition formed upon reconstitution with said aqueous vehicle.

Detailed Description Text (2):

The present invention relates to a pharmaceutical liposome formulation of a porphyrin photosensitizer for use in the photodynamic therapy or diagnosis of tumors, or for a variety of other therapeutic applications. The liposomes are formed upon addition of an aqueous vehicle to a freeze-dried formulation of a porphyrin photosensitizer, a disaccharide or polysaccharide, and one or more phospholipids such as phosphatidyl cholines or phosphatidyl glycerols. The presence of the disaccharide or polysaccharide in the formulation yields liposomes which have extremely small and narrow particle size, in which the porphyrin photosensitizers may be stably incorporated into the liposome in an efficient manner with encapsulation efficiency approaching 80-100% of the drug. The liposomes exhibit physical and chemical stability such that they retain incorporated porphyrin drugs without leakage upon prolonged storage, as either a reconstituted liposomal suspension or cryodesiccated powder. For example, BPD-MA, a preferred

porphyrin photosensitizer, maintained its potency in the cryodesiccated liposome formulation for a period of at least nine months at room temperature and had a projected shelf life of at least two years.

Detailed Description Text (4):

Liposomes containing a selected porphyrin photosensitizer as described herein may be prepared by dissolving the porphyrin photosensitizer, the phospholipids and other optional adjuvants such as antioxidants in methylene chloride or other suitable organic solvents. The resulting solution is dried under vacuum until the organic solvent is evaporated. The solid residue is dispersed in an aqueous solution of the disaccharide or polysaccharide and homogenized. The solution is then freeze dried for storage and reconstituted prior to administration with a suitable aqueous vehicle such as sterile water for injection. Upon reconstitution, liposomes are formed which incorporate a therapeutically effective amount of the porphyrin photosensitizer.

Detailed Description Text (12):

Such liposomes are typically administered parenterally. Injection may be intravenous, subcutaneous, intramuscular, intrathecal, or even intraperitoneal. The liposomes could be administered by aerosol intranasal or intrapulmonarily. The freeze dried powder may be packed in vials for reconstitution with sterile water prior to injection. Of course, these compositions may also contain minor amounts of nontoxic, auxiliary substances such as pH buffering agents and the like.

Detailed Description Text (18):

Either unilamellar or multilamellar or other types of liposomes may be used in the practice of the present invention. They may be prepared in a suspension form or may be formed upon reconstitution of a lyophilized powder containing the porphyrin--phospholipid--saccharide composition with an aqueous solution.

Detailed Description Text (23):

BPD-MA, butylated hydroxytoluene, ascorbyl palmitate and the phospholipids are dissolved in methylene chloride and the solution is filtered through a 0.22 micron filter. The solution is then dried under vacuum using a rotary evaporator until the methylene chloride level in the solid residue is not detectable by gas chromatography. A 10% lactose/water for injection solution is then prepared and filtered through a 0.22 micron filter. The lactose/water solution is warmed to about 35.degree. C. and added to the flask containing the solid residue of the photosensitizer/phospholipid. The solid residue is dispersed in the 10% lactose/water solution and stirred for about one hour, cooled, and passed through a homogenizer. The solution is then filtered through a 0.22 micron Durapore.RTM. hydrophilic filter. Optionally, the solution may first be prefiltered with a 5.0 micron prefilter. The filtrate is collected, filled into vials and freeze dried and stored under refrigeration. The freeze dried composition is reconstituted with water for injection prior to administration.

Other Reference Publication (2):

Ricchelli, F., et al., "Porphyrins as fluorescent probes for monitoring phase transitions of lipid domains in biological membranes. Factors influencing the microenvironment of haematoporphyrin and protoporphyrin in liposomes," Journal of Photochemistry and Photobiology B:Biology (1995) 29:65-70.

CLAIMS:

8. A liposomal formulation according to claim 5 that is freeze-dried.

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L2: Entry 4 of 9

File: USPT

Jan 13, 1998

DOCUMENT-IDENTIFIER: US 5707608 A

TITLE: Methods of making liposomes containing hydro-monobenzoporphyrin photosensitizer

Brief Summary Text (11):

Accordingly, hematoporphyrin and hematoporphyrin dimethyl esters have been formulated in unilamellar vesicles of dipalmitoyl phosphatidyl choline (DPPC) and liposomes of dimyristoyl (DMPC) and distearoyl phosphatidyl choline (DSPC). Zhou et al., *supra*; Ricchelli, *New Directions in Photodynamic Therapy*, 847:101-106 (1987); Milanesi, *Int. J. Radiat. Biol.*, 55:59-69 (1989). Similarly, HP, Photofrin.RTM., porfimer sodium, and tetrabenzoporphyrins have been formulated in liposomes composed of egg phosphatidyl choline (EPC). Johnson et al., *Proc. Photodynamic Therapy: Mechanisms II*, *Proc. SPIE-Int. Soc. Opt. Eng.*, 1203:266-80 (1990). Further, freeze-dried pharmaceutical formulations comprising a porphyrin photosensitizer, a disaccharide or polysaccharide, and one or more phospholipids (such as EPG and DMPC) have been made. These formulations form liposomes containing an effective amount of porphyrin photosensitizer upon reconstitution with a suitable aqueous vehicle and are described in Desai et al., copending U.S. application Ser. No. 08/489,850 filed 13 Jun. 1995.

Detailed Description Text (26):

Any cryoprotective agent known to be useful in the art of preparing freeze-dried formulations, such as di- or polysaccharides or other bulking agents such as lysine, may be used in the claimed invention. Further, isotonic agents typically added to maintain isomolarity with body fluids may be used. In a preferred embodiment, a di-saccharide or polysaccharide is used and functions both as a cryoprotective agent and as an isotonic agent.

Detailed Description Text (65):

(15) Freeze-drying.

Detailed Description Text (66):

Freeze-drying

Detailed Description Text (67):

Once formulated, the liposome composition of the invention may be freeze-dried for long-term storage if desired. For example, BPD-MA, a preferred hydro-monobenzoporphyrin photosensitizer, has maintained its potency in a cryodesiccated liposome composition for a period of at least nine months at room temperature, and a shelf life of at least two years has been projected. If the composition is freeze-dried, it may be packed in vials for subsequent reconstitution with a suitable aqueous solution, such as sterile water or sterile water containing a saccharide and/or other suitable excipients, prior to administration, for example, by injection.

Detailed Description Text (68):

Preferably, liposomes that are to be freeze-dried are formed upon the addition of an aqueous vehicle contain a disaccharide or polysaccharide during hydration. The composition is then collected, placed into vials, freeze-dried, and stored, ideally under refrigeration. The freeze-dried composition can then be reconstituted by

simply adding water for injection just prior to administration.

Detailed Description Text (76) :

Generally speaking, the concentration of the hydro-monobenzoporphyrin photosensitizer in the liposome depends upon the nature of the photosensitizer used. When BPD-MA is used, for example, the photosensitizer is generally incorporated in the liposomes at a concentration of about 0.10% up to 0.5% w/v. If freeze-dried and reconstituted, this would typically yield a reconstituted solution of up to about 5.0 mg/ml photosensitizer.

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1. Document ID: US 6375930 B2

Using default format because multiple data bases are involved.

L2: Entry 1 of 9

File: USPT

Apr 23, 2002

US-PAT-NO: 6375930

DOCUMENT-IDENTIFIER: US 6375930 B2

TITLE: Membrane incorporation of texaphyrins

DATE-ISSUED: April 23, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Young; Stuart W.	Portola	CA		
Wright; Meredith	San Jose	CA		
Sessler; Jonathan L.	Austin	TX		
Mody; Tarak D.	Sunnyvale	CA		
Magda; Darren	Cupertino	CA		

US-CL-CURRENT: 424/9.362; 424/1.11, 424/1.65, 424/450, 424/9.1, 424/9.3, 540/1, 540/145, 544/1, 546/11

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Drawn	Def
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2. Document ID: US 6270749 B1

L2: Entry 2 of 9

File: USPT

Aug 7, 2001

US-PAT-NO: 6270749

DOCUMENT-IDENTIFIER: US 6270749 B1

TITLE: Use of Texaphyrin in ocular diagnosis and therapy

DATE-ISSUED: August 7, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Blumenkranz; Mark S.	Portola Valley	CA		
Woodburn; Kathryn W.	Sunnyvale	CA		
Miller; Richard A.	Portola Valley	CA		
Young; Stuart W.	Portola Valley	CA		

US-CL-CURRENT: 424/9.61; 424/9.6, 514/185, 514/912

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KM/C	Drawn De
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3. Document ID: US 6074666 A

L2: Entry 3 of 9

File: USPT

Jun 13, 2000

US-PAT-NO: 6074666

DOCUMENT-IDENTIFIER: US 6074666 A

** See image for Certificate of Correction **

TITLE: Liposome compositions of porphyrin photosensitizers

DATE-ISSUED: June 13, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Desai; Narendra Raghunathji	Danbury	CT		
Agha; Bushra J.	Durham	NC		
Kale; Kalidas Madhavrao	Harriman	NY		

US-CL-CURRENT: 424/450

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KM/C	Drawn De
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4. Document ID: US 5707608 A

L2: Entry 4 of 9

File: USPT

Jan 13, 1998

US-PAT-NO: 5707608

DOCUMENT-IDENTIFIER: US 5707608 A

TITLE: Methods of making liposomes containing hydro-monobenzoporphyrin photosensitizer

DATE-ISSUED: January 13, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Liu; Ron	North Chicago	IL		

US-CL-CURRENT: 424/9.61; 424/9.1, 424/9.6

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KM/C	Drawn De
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5. Document ID: US 5458595 A

L2: Entry 5 of 9

File: USPT

Oct 17, 1995

US-PAT-NO: 5458595

DOCUMENT-IDENTIFIER: US 5458595 A

TITLE: Vaginal speculum for photodynamic therapy and method of using the same

DATE-ISSUED: October 17, 1995

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Tadir; Yona	Irvine	CA		
Berns; Michael W.	Trabuco Canyon	CA		
Monk; Brad J.	Long Beach	CA		
Profeta; Glen	Rancho Santa Margarita	CA		
Tromberg; Bruce J.	Irvine	CA		

US-CL-CURRENT: 606/15; 600/220, 606/14[Full](#) [Title](#) [Citation](#) [Front](#) [Review](#) [Classification](#) [Date](#) [Reference](#) [Sequenced](#) [Attic](#) [Claims](#) [KMC](#) [Drawn](#) 6. Document ID: US 5389378 A

L2: Entry 6 of 9

File: USPT

Feb 14, 1995

US-PAT-NO: 5389378

DOCUMENT-IDENTIFIER: US 5389378 A

TITLE: Benzoporphyrin vesicles and their use in photodynamic therapy

DATE-ISSUED: February 14, 1995

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Madden; Thomas D.	Vancouver	CA		

US-CL-CURRENT: 424/450; 428/402.2[Full](#) [Title](#) [Citation](#) [Front](#) [Review](#) [Classification](#) [Date](#) [Reference](#) [Sequenced](#) [Attic](#) [Claims](#) [KMC](#) [Drawn](#) 7. Document ID: US 5238940 A

L2: Entry 7 of 9

File: USPT

Aug 24, 1993

US-PAT-NO: 5238940

DOCUMENT-IDENTIFIER: US 5238940 A

TITLE: Compositions for photodynamic therapy

DATE-ISSUED: August 24, 1993

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Liu; Daniel	Vancouver			CA
Jiang; Frank	Vancouver			CA
Hobbs; John	Vancouver			CA

US-CL-CURRENT: 514/410; 514/2, 514/43, 540/145

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Dependencies](#) | [Attachments](#) | [Claims](#) | [KWMC](#) | [Drawn D](#)

8. Document ID: US 5053423 A

L2: Entry 8 of 9

File: USPT

Oct 1, 1991

US-PAT-NO: 5053423

DOCUMENT-IDENTIFIER: US 5053423 A

TITLE: Compositions for photodynamic therapy

DATE-ISSUED: October 1, 1991

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Liu; Daniel	Vancouver			CA

US-CL-CURRENT: 514/410; 514/2, 540/145

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Dependencies](#) | [Attachments](#) | [Claims](#) | [KWMC](#) | [Drawn D](#)

9. Document ID: US 5041078 A

L2: Entry 9 of 9

File: USPT

Aug 20, 1991

US-PAT-NO: 5041078

DOCUMENT-IDENTIFIER: US 5041078 A

**** See image for Certificate of Correction ****

TITLE: Photodynamic viral deactivation with sapphyrins

DATE-ISSUED: August 20, 1991

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Matthews; J. Lester	Dallas	TX		
Judy; Millard M.	Dallas	TX		
Newman; Joseph T.	Dallas	TX		
Sogandares-Bernal; Frank	Dallas	TX		
Sessler; Jonathan L.	Austin	TX		
Harriman; Anthony	Austin	TX		
Maiya; Bhaskar G.	Hyderabad			IN

US-CL-CURRENT: 604/6.08; 540/145[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Attachments](#) | [Claims](#) | [KMC](#) | [Drawn De](#)[Clear](#) | [Generate Collection](#) | [Print](#) | [Fwd Refs](#) | [Bkwd Refs](#) | [Generate OACS](#)

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